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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,431	10/30/2003	Jari Makinen	KOLS.062PA	3286

7590 05/07/2007  
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EXAMINER
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KOVACEK, DAVID M

ART UNIT	PAPER NUMBER
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2609

MAIL DATE	DELIVERY MODE
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05/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/699,431

Applicant(s)

MAKINEN ET AL.

Examiner

David Kovacek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 1-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/30/2003 & 02/26/2004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "110" has been used to designate two different base stations. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The spacing of the lines of the specification is such as to make reading difficult. New application papers with lines 1½ or double spaced on good quality paper are required.

3. The disclosure is objected to because of the following informalities:

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- Page 3, paragraph 0011, lines 2-3 (Under "BRIEF SUMMARY OF THE INVENTION") reads, "adaptive such that responsive to changes." It is the examiner's belief that this should read "adaptive such that they are responsive to changes."
- Page 3, paragraph 0012, line 1 (Under "BRIEF SUMMARY OF THE INVENTION") should read, "Also, according [ ] to another embodiment." This is the interpretation used for the purposes of examination.
- Page 5, paragraph 0019, lines 3-4 refer to "base stations 110." As noted above, the same reference character may not be used to designate two different parts of the invention according to 37 CFR 1.84(p)(4).
- Page 11, paragraph 0036, lines 3-4 (under "DETAILED DESCRIPTION OF THE INVENTION") reads, "...without that the speech quality deteriorates." It is the examiner's belief that this should read, "...without the speech quality deteriorating." This is the interpretation used for purposes of examination.

Appropriate correction is required.

#### ***Claim Objections***

4. The claims are objected to because the lines are crowded too closely together, making reading difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 8, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent 1,126,651 A1, hereinafter referred to as Demetrescu.

Regarding **claim 1**, Demetrescu teaches a method of link adaptation using a plurality of speech codec modes for transmission in a telecommunications network including:

- receiving information on an active codec mode supported by the telecommunications network (Paragraph 0015);
- activating the supported codec mode that corresponds to the active moved set of the telecommunications network (Paragraphs 0028, 0037-0038); and
- encoding signals to be applied to the codec with the activated speech codec modes such that there is a minimization of bitrate and minimization of error in coding at the same time (Paragraphs 0005, 0032).

Regarding **claim 2**, Demetrescu further teaches:

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- the method responds to changes in conditions of the telecommunications network (Paragraphs 0037-0038);
- the method responds to changes in the active codec mode set (Paragraph 0056);
- the method adapts the parameters to be used in the speech codec mode selection to correspond to new channel conditions of the telecommunications network or to a new active codec mode set (Paragraphs 0039, 0041).

Regarding **claim 8**, this claim has similar limitations to **claim 1**, and is rejected for the same reasons.

Regarding **claim 15**, this claim has similar limitations to **claim 1**, and is rejected for the same reasons.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 9-10 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Demetrescu in view of US Patent 6,574,593 B1, hereinafter referred to as Gao.

Regarding **claim 3**, Demetrescu teaches all limitations of **claim 1** as applied above, but does not teach the adapting of the target level of residual error in speech codec mode selection and bit rate to an average bit rate in the telecommunications network.

Gao teaches a speech coder capable of selectively activating codec modes to maximize quality while maintaining a desired average bit rate (Col. 5, lines 19-22; col. 7, lines 19-28).

Gao additionally provides motivation in the need for this method to maximize available bandwidth while optimizing the perceptual quality of synthesized speech (Col. 4, line 66 – col. 5, line 6).

Therefore, the examiner contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Demetrescu using the teachings of Gao in order to optimize perceptual quality of synthesized speech on a telecommunications network while still maintaining average bit rate of the network to maximize use of available bandwidth.

Regarding **claim 9**, Demetrescu teaches all limitations of **claim 8** as applied above, but this claim has similar further limitations to **claim 3** and is rejected for the same reasons.

Regarding **claim 10**, Demetrescu further teaches:

- a means for determining a speech codec mode for a speech frame by determining a codec mode of the lowest bit rate and selecting which mode minimizes the residual error in coding (Paragraph 0005); and
- a means for adapting the parameters to be used in the speech codec mode selection to correspond to new channel conditions of the telecommunications network or to a new active codec mode set (Paragraph 0039, 0041).

Regarding **claim 16**, Demetrescu teaches all limitations of **claim 15** as applied above, and additionally teaches encoding signals to be applied to the codec with the activated speech codec modes such that there is a minimization of bitrate and minimization of error in coding at the same time (Paragraphs 0005, 0032). The further limitations of this claim are similar to the limitations of **claim 3** and it is rejected for the same reasons.

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demetrescu in view of US Patent 5,689,615, hereinafter referred to as Benyassine.

Regarding **claim 4**, Demetrescu teaches all limitations of **claim 1** as applied above, but does not teach the additional limitations of **claim 4**.

Benyassine teaches:

- performing a sub-process on each frame of a speech signal to obtain parameters (Col. 3, lines 39-48; col. 3, line 64 – col. 4, line 1); and



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- adapting a speech codec mode on the basis of the parameters obtained from said sub-process (Col. 3, line 64 – col. 4, line 1; claim 7).

Benyassine provides motivation by disclosing the use of this method to create a more natural synthesized background noise without a significant reduction in efficiency (Col. 2, lines 8-13).

Therefore, the examiner contends that it would have been obvious to one of ordinary skill at the art at the time the invention was made to modify Demetrescu using the teachings of Benyassine to create a more natural synthesized background noise in speech transmission without a significant reduction in efficiency.

Regarding **claim 5**, Benyassine further teaches that the sub-process is VAD parameterization (Col. 3, lines 30-48; claim 7).

Regarding **claim 6**, Benyassine further teaches:

- adapting a low bit rate speech codec mode for appropriate values of VAD parameters (Col. 3, line 64 – col. 4, line 3, claim 7); and
- adapting a high bit rate speech codec mode for appropriate values of VAD parameters (Col. 3, line 64 – col.4, line 3; claim 7).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demetrescu in view of Benyassine as applied to **claim 4** above, and further in view of

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the IEEE article "Phonetically-Based Vector Excitation Coding of Speech at 3.6 kbps" by Wang and Allen, hereinafter referred to as Wang.

Regarding **claim 7**, this Demetrescu in view of Benyassine teaches all limitations of **claim 4** as applied above, but does not teach any further limitations of this claim.

Wang teaches the parameterization of speech frames based upon features including spectral content, the gains of different speech frame parameters, and zero crossings of a speech frame (p. 50, col. 2, paragraph 2).

Wang further teaches the classification of a speech frame based upon said parameterizations of that speech frame (p. 50, col. 1, paragraph 2; p. 50, col. 2, paragraph 2).

Wang further provides motivation by disclosing the usefulness of this parameterization in utilizing phonetic integrity as a measure of perceptual quality of speech (p. 49, col. 1, paragraph 4; p. 50, col. 1, paragraph 4).

Therefore, the examiner contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Demetrescu in view of Benyassine using the teachings of Wang in order to code speech using phonetic integrity to ensure high perceptual quality while maintaining a natural synthesized background noise without a significant reduction in efficiency.

### ***Double Patenting***

9. Claims 1-3, and 8 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-7, and 17

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of copending Application No. US 2005/055203. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1-3, and 8** of the current application cover the same material as one or more of claims 1-3, 6-7, and/or 17 of Application No. 2005/0055203. An example of a direct comparison providing the basis of all such provisional rejections is shown below for **claim 1**. In all instances, "generally understood" refers to the understanding of one of ordinary skill in the art.

Current Application Language	2005/055203 Language	Basis for Provisional Rejection
1. A method for performing variable rate speech coding in a speech codec comprising a plurality of speech codec modes operating at different bit rates and speech encoded by said speech codec being arranged for transmission in a telecommunications network, the method comprising:	1. A method for multi-rate encoding in a communication system, the method comprising the steps of:	"Variable rate" is generally understood to be synonymous with "multi-rate" in this context.  "Speech coding" is considered a subset of "encoding in a communication system."  Further description of the variable rate speech encoding is generally understood to be included as a subset of encoding in a communication system.
receiving information on an active codec mode set to be supported from the telecommunications network;	receiving a bit rate target for encoding a signal by the codec, the bit rate target having a value between a minimum and maximum average bit rate of the codec;	"Bit rate target" is generally understood to be information about the active codec mode set in a communications network.
activating the speech-codec-supported speech codec modes that correspond to the active codec mode set determined in the telecommunications network;	selecting an encoding mode based on the bit rate target and the sets of tuning parameters;	These two limitations are generally understood to be synonymous in this context.
and encoding speech signals to be applied to the speech codec with said activated speech codec modes such that a speech codec mode of	and encoding the signal by a selected encoding mode.	These limitations are generally understood to be synonymous in this context.

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the substantially lowest bit rate is adapted to speech frames comprised by the speech signals such that, in view of the channel conditions in the telecommunications network, the level of residual error in coding will be minimized at the same time.		
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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 1 and 8 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10 and 15 of copending Application No. 2005/0143984. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1 and 8** of the current application cover the same material of claims 10 and 15 of Application No. 2005/143984 respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 1, 4-5, and 8 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 12, and 17 of copending Application No. 2005/0075873. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1, 4-5, and 8**

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of the current application cover the same material as one or more of claims 1, 3, 12, and/or 17 of Application No. 2005/075873.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Ojala (US Patent 5,933,803) teaches a method of variable bit rate speech encoding.
- Gao et al. (US Patent 6,104,992) discloses a method of multi-rate speech coding that makes use of LTP parameterization.
- Hershkovits et al. (US Patent 6,377,923) discloses a method of speech recognition that makes use of LPC parameterization in coding and decoding.
- Barany et al. (US Patent Application 2003/0189900) teaches a communications network using adaptive multi-rate codecs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Kovacek whose telephone number is (571) 270-3135. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on (571) 272-7687. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Eisen  
SPE  
Art Unit 2609

DMK 05/01/2007